

AGENCY OF NATURAL RESOURCES
Department of Environmental Conservation
and Department of Fish and Wildlife

103 South Main Street
Waterbury, VT 05671

June 3, 2002

Vermont Stream Geomorphic Assessment Protocols

The Agency of Natural Resources is in the first year of a two year process to draft a set of Stream Geomorphic Assessment Handbooks designed to help you answer the following questions about streams and rivers within your watershed:

- What are the physical processes and features that characterize your stream and its watershed?
- How have human activities affected these processes and features over time?
- Which of these physical processes and features are more sensitive to change, and how are they likely to change in the future?
- Which of these processes and features are important for creating and sustaining quality habitat for fish and other aquatic biota?
- Which of these processes and features present high erosion and flood hazard risks to human investments?

The Vermont Stream Geomorphic Assessment Handbooks have been developed as tools to use in assessing, understanding, evaluating, and, ultimately, resolving or avoiding conflicts between fluvial systems and human interests and values. They draw upon and combine the stream geomorphic methods and practices utilized by scientists and resource managers throughout North America and Europe. While great care has been taken to align these protocols with those adopted by other state and federal agencies, they will be informed and revised over time by data and experience obtained on streams throughout Vermont and the surrounding region.

The Agency puts forward these protocols with a focus on those watershed processes and features critical to its riparian corridor management objectives. Assessment protocols and data evaluation methods have been developed and based, in part, on the experience of Vermont watershed resource managers, as well as the social, economic, multi-objective and inter-agency environment within which they endeavor to solve every-day, stream-related problems. These protocols do not attempt to capture or explain the full breadth of scientific understanding related to fluvial geomorphology or watershed ecosystems with their inherent physical, chemical, and biological complexity.

The information gathered through stream geomorphic analyses will be used for basin planning; river and riparian corridor protection, management, and restoration projects; aquatic and riparian habitat assessment; and hazard assessment to reduce property loss and damage from riverine erosion during floods.

The Stream Geomorphic Assessment Handbook provides standard protocols for the three levels of watershed assessment:

- Phase 1 Watershed Assessment – using maps, existing data, and windshield surveys
- Phase 2 Rapid Assessment – using field observation and simple measurements
- Phase 3 Survey Assessment – using surveying techniques and quantitative analysis

An important reason for standard protocols is to ensure that data is collected consistently and so that data can be compared between watersheds and regions, as well as within a watershed. The purpose of these watershed assessments is to gather scientifically sound information that can be used for watershed planning and detailed assessments of aquatic habitat, erosion, and flood hazards.

The final drafting of the Handbooks will be completed early in 2003. The Agency is releasing these drafts to assist current ongoing projects involved with:

- stream buffer and riparian corridor conservation projects;
- assessment, design, and permitting of river management and restoration projects; and
- watershed assessment, habitat monitoring, and basin planning.

Handbook downloading instructions are included below. The Handbooks are being provided electronically so that copies printed in your office will maintain the graphics quality that is lost when the documents are reproduced on our copy machines. The final version of the Handbooks will be available on the Agencies' Web site.

The Agency is pleased with the partnerships that have been formed during the pilot assessments conducted to first test the Handbook protocols during the 2001 field season. We are even more pleased that our partners are ready to take these assessments further and have begun several watershed conservation projects using data they collected. The Agency will continue to seek partnerships throughout the region to conduct stream geomorphic assessments and gain support for making this assessment program both technically sound and accessible. To this end, the Agency welcomes both general and technical review comments on the assessment protocols.

Sincerely,

Mike Kline, River Ecologist
River Corridor Management
DEC, Water Quality Division
103 South Main St., Building 10 North
Waterbury, Vermont 05671-0408
(802) 241-3774
mikek@dec.anr.state.vt.us

Christa Alexander, Aquatic Habitat Biologist
Fisheries Division
Department of Fish and Wildlife
103 South Main St., Building 10 South
Waterbury, VT 05671-0501
(802) 241-1356
christa@fwd.anr.state.vt.us

Barry Cahoon, P.E., Chief River Mgt. Engineer
River Corridor Management
DEC, Water Quality Division
1229 Portland Street, Suite 201
St. Johnsbury, VT 05819-2099
(802) 751-0129
barry.Cahoon@anrmail.anr.state.vt.us

Larry Becker, State Geologist
Vermont Geological Survey
103 South Main Street, Laundry Building
Waterbury, VT 05671-0407
(802) 241-3496
larryb@dec.anr.state.vt.us

Shayne Jaquith, River Resource Scientist
River Corridor Management
DEC, Water Quality Division
103 South Main St., Building 10 North
Waterbury, Vermont 05671-0408
(802) 241-4456
shaynej@dec.anr.state.vt.us

Staci Pomeroy, River Resource Scientist
River Corridor Management
DEC, Water Quality Division
103 South Main St., Building 10 North
Waterbury, Vermont 05671-0408
(802) 241-4456
stacip@dec.anr.state.vt.us

VTANR Stream Geomorphic Assessment Handbook

Downloading Instruction

System requirement: FTP and Acrobat Reader software (both can be downloaded free). The handbooks are in a PDF format and you will need **Adobe Acrobat Reader** to view and read the PDFs. You can download Adobe Acrobat Reader for free at <http://www.adobe.com/products/acrobat/readstep.html>.

Downloading FTP (File Transfer Protocol) Software: If you do not currently have an FTP software on your computer go to <http://www.tucows.com> . Search for and download WS-FTP LE 5.08. WS FTP Le 5.08 is free FTP software that has worked well for us. If you prefer to use another FTP software feel free to do so. Once you've downloaded and installed the FTP software you can use it to access the state FTP site. You will need to use the following info to access the state FTP site.

Profile Name: ANR FTP
Host Name/Address: 170.222.24.14
Host Type: Automatic Detect
User ID: waterq
Password: lilypad

If you do not have access to FTP software, but have Internet access, you can get at the FTP site by entering the WEB address: <ftp://waterq:lilypad@170.222.24.14/> . This address brings up the same folders and directories.

Navigating The Site: The Agencies FTP site contains a folder called “**Geomorphic Assessment - FTP**” which you can get to by navigating the following path /home/waterq/Geomorphic Assessment - FTP.

In the Geomorphic Assessment - FTP folder are individual folders for the Phase 1, 2, and 3 Handbooks. Each of these folders contain the 20+ files that comprise the Handbook. These include a cover page, table of contents, introduction, methods, references, appendices, and data forms. The files are listed in the order they appear in the document except for some of the appendix covers that will need to collated with the appropriate appendices. Also in the Geomorphic Assessment - FTP folder is a folder titled Data Mgt System which contains the Microsoft Access data entry forms, tables, queries, and reports developed to help manage and share Phase 1 and 2 base assessment data. The Data Mgt System folder also contains the Microsoft Excel spreadsheet developed to analyze Phase 3 survey data.

Transferring Files to Your Computer: In the ANR (remote) directory window find the specific folder or file that you would like to transfer and highlight it. In your (local) directory window navigate to the location that you would like to transfer the file to. Next simply highlight the file in the remote directory and click on the arrow pointing from the remote directory to the local directory. The software will do the rest.

Updates and Additions to Site Contents: Check the file dates in the folders for new and updated materials. Several data base files and the draft Phase 3 Handbook will be completed by mid-April. Other data base reports and queries may be added as they are developed.